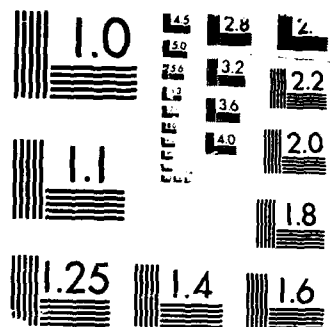


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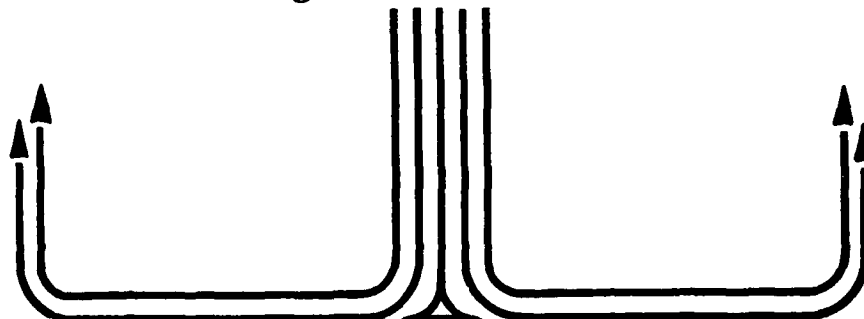
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# AIR COMMAND AND STAFF COLLEGE

## STUDENT REPORT

CONSOLIDATION OF THE MUNITIONS AND  
AIRCRAFT MAINTENANCE OFFICER CAREER  
FIELDS

MAJOR LARRY CHANDLER REPORT #88-0505  
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**REPORT NUMBER**  
**TITLE**

88-0505

**CONSOLIDATION OF THE MUNITIONS AND AIRCRAFT  
MAINTENANCE OFFICER CAREER FIELDS**

**AUTHOR(S)**

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Submitted to the faculty in partial fulfillment of  
requirements for graduation.

**AIR COMMAND AND STAFF COLLEGE**  
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## PREFACE

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Whenever Air Force maintenance officers gather, inevitably the subject of merging the munitions officer AFSC (4054A) with the aircraft maintenance officer AFSC (4024) is discussed. This has been a highly emotional issue since 1971 and has had proponents and opponents ranging from the Deputy Chief of Staff, Logistics and Engineering, Headquarters (Hq) United States Air Force to the most junior aircraft and munitions maintenance officers at the squadron level. Will this merger increase mission flexibility? Have weapon systems become so complex only specialist officers can cope? Are specialist munitions maintenance officers required to fill key command and staff positions? An analysis was needed to clarify these controversial questions.

The authors analyzed the arguments for and against the Air Force Specialty Code (AFSC) merger, reached a conclusion, and made several recommendations on areas requiring more study. Further, the historical evolution of the aircraft and munitions career fields was traced back to their origins in 1907. The purpose was to provide a single reference document and bibliography for every officer who is interested in our maintenance history. This document will also assist those senior leaders who desire to influence this and future maintenance personnel policies.

It should be noted that although we referenced the Air Force 2000 study which is classified SECRET, only unclassified portions were used. This paper therefore is UNCLASSIFIED.

This paper would not have been possible without the support and guidance of several very professional officers. We'd like to take this opportunity to thank, firstly, Lieutenant Colonel (select) Michael Meyer, Headquarters United States Air Force, Maintenance and Policy Division, for providing sponsorship and a large portion of the primary documentation used in this study. Our thanks as well to Major Phillip Miller, Air Command and Staff College faculty, for being our advisor. We also express gratitude to the following Air Force Military Personnel Center staff officers for their assistance in providing statistics and primary source documents: Major Mark Taylor, Chief, Maintenance and Munitions Officer Assignment Team; Captain Wendy Campo, Chief, Classification and Training Branch; and to

Captain Steve Wilson, Staff Officer, Colonels' Group. Our thanks to Lieutenant Colonel Don Searles, Headquarters United States Air Force, Maintenance Policy Division, and to Captains Hugh Taylor and John Wood of the Air Force Logistics Management Center. We deeply appreciate the time and energy given by Colonel Dennis Haines and Colonels (select) Denny Portz and David Reed for providing comments to this manuscript and for keeping us straight! Finally, we appreciate the special support provided by Margaret Chandler and Ray George. To all we extend our grateful appreciation.

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## ABOUT THE AUTHOR

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Major Larry Chandler is a prior service officer who was commissioned through the Officer Training School in November 1977, where he graduated second in his class and was designated a distinguished graduate. He was also a distinguished graduate of the Munitions Officer Course, Lowry AFB, Colorado. His first duty assignment was to the 4th Aircraft Generation Squadron (AGS), Seymour-Johnson AFB, North Carolina. While at Seymour-Johnson, Major Chandler attended the US Navy Explosive Ordnance Disposal (EOD) School, Indian Head, Maryland. He served as Officer in Charge of the EOD Branch at Seymour-Johnson AFB and EOD Flight Commander at RAF Lakenheath, United Kingdom. Following his tour in England, Major Chandler performed duties as an EOD, munitions and aircraft maintenance inspector on the HQ United States Air Forces Europe (USAFE) Inspector General (IG) staff. After completing his IG tour, he was assigned to the 3098th Aviation Depot Squadron, Air Force Logistics Command (AFLC), Kirtland AFB, New Mexico. During this time, Major Chandler was selected as the USAF Company Grade Munitions Manager of the Year for 1985. He was also an honor graduate of the University of Maryland. He earned his Master of Business Administration Degree with a concentration in Aviation from Embry-Riddle Aeronautical University in 1981. In addition, Major Chandler possesses a Federal Aviation Administration certificate as an Airframe and Powerplant Mechanic. His professional military education includes Squadron Officer School where he was again a distinguished graduate. He has also completed the Marine Corps Command and Staff College, the Air Command and Staff College, and the National Defense University, National Security Management Course by correspondence. Following graduation from ACSC, Major Chandler will command the 90th Munitions Maintenance Squadron, F.E. Warren AFB, Wyoming.



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## ABOUT THE AUTHOR

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Major Jennifer Fox was commissioned through the Officer Training School in July 1974. After completing munitions officer technical training at Lowry AFB, Colorado, she was assigned to the 33d Tactical Fighter Wing, Eglin AFB, Florida, where she served as the Officer In Charge (OIC) of Weapons Loading and as the Services Branch Chief. She subsequently served as the Chief of Munitions at Detachment 3, 425th Munitions Support Squadron, Canadian Forces Base Bagotville, Quebec, Canada. After this short tour, she returned to serve as the officer in charge of the Munitions Storage Area and OIC of the Equipment Maintenance Squadron (EMS) Maintenance Branch, 1st Special Operations Wing, Hurlburt Field, Florida. She then served as an Exchange Officer with the Canadian Armed Forces at National Defense Headquarters, Ottawa, Canada. She performed duties as the Life Cycle Manager for the CF-101, CF-5 and CF-18 armament systems while stationed in Ottawa. She was selected to participate in the Air Staff Training program (ASTRA) in 1981 at Headquarters United States Air Force, Washington, DC. While in this program, she served in the office of the Deputy Chief of Staff for Logistics and Engineering, Chief of Maintenance and Supply (LEY) and worked logistics issues for the FY 84-88 budget cycle. Following her tour in Washington, Major Fox was assigned to the 42d Bombardment Wing, Strategic Air Command (SAC), Loring AFB, Maine, as the Munitions Maintenance Supervisor. In November 1984, she was assigned to the Logistics Maintenance Assignments Team, Headquarters, Air Force Military Personnel Center (AFMPC), Randolph AFB, Texas. Major Fox has an Associate in Arts Degree from Hartford College for Women, a Bachelor of Arts Degree in History with high honors from the University of New Hampshire and a Master of Arts Degree in Management from Webster University. She attended Squadron Officer School in 1977, and completed the Air Command and Staff College seminar program in 1984. Major Fox will be assigned as Commander, 50th Component Repair Squadron, Hahn Air Base, Germany upon completion of the ACSC residence course.

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## EXECUTIVE SUMMARY

Part of our College mission is distribution of the students' problem solving products to DOD sponsors and other interested agencies to enhance insight into contemporary, defense related issues. While the College has accepted this product as meeting academic requirements for graduation, the views and opinions expressed or implied are solely those of the author and should not be construed as carrying official sanction.

"insights into tomorrow"

**REPORT NUMBER**

88-0505

**AUTHOR(S)**

MAJOR LARRY S. CHANDLER, USAF

**TITLE**

MAJOR JENNIFER B. FOX, USAF

### CONSOLIDATION OF THE MUNITIONS AND AIRCRAFT MAINTENANCE OFFICER CAREER FIELDS

I. Purpose: To analyze the evolutionary history of maintenance officer Air Force Specialty Codes (AFSCs); to identify current options for and against merger of the aircraft (AFSC 4024) and the munitions (AFSC 4054) officer AFSCs; to produce a single document summarizing the history and initiatives to the present; and finally, to recommend a course of action and areas requiring further study.

II. Problem: Should the munitions and aircraft maintenance officers AFSCs be merged at the company grade level?

III. Discussion of Analysis: This merger was proposed because the HQ USAF/LEY staff thought that the current system worked on paper but was

not reality at the wing level. The analysis revealed valid arguments on both sides of the merger controversy, but each side was addressing a different problem. There were five different points brought out in this analysis. First, in the Air Force 2000 plan, combat doctrine outlines extensive dispersal of aircraft (TAF and SAC), fighting from small bare bases with a minimum of support personnel. The only way to support this concept appeared to be with a broadly qualified maintenance officer who could manage all activities required to generate a combat sortie. Second, the argument that weapons systems are becoming more sophisticated and thus require a specialist officer fails to hold up if one considers the reliability and maintainability initiative (R&M). This initiative entails improving weapons systems so they do not malfunction and are modular in design. If they do break, it is a "remove and replace" rather than an internal "take apart and repair" action. Even though the systems are becoming more complex, they are actually easier to maintain. Third, the argument that there will not be sufficient numbers of technically trained officers for "hard-core" munitions jobs is flawed. There would still be the same number of company grade authorizations from which to grow qualified munitions officers, and AFMPC would continue to channel officers through these jobs. The suggestion to identify officers with nuclear experience by a "N" suffix would ease AFMPC's tracking task. Fourth, Deputy Commanders for Maintenance (DCM) must be allowed the flexibility to assign maintenance officers according to the need, particular officer's strengths, and leadership potential. Fifth, even though commands such as Military Airlift Command (MAC) and Air Training Command (ATC) have little need for munitions experienced maintenance officers, those officers do have to help fill tactical air forces (TAF) overseas rotational requirements where munitions experience is required.

IV. Conclusions: The aircraft officer AFSC (4024) and the munitions officer AFSC (4054) should be merged at the company grade level; however, officers with nuclear capable unit experience and the formal training should be identified with an "N" suffix (AFSC 4024N). This will improve overall maintenance capability, boost morale and provide greater career development opportunities for company grade maintenance officers.

V. Recommendations: Current initiatives to improve the Air Force's ability to "train like we fight," such as the Air Force Combat Ammunition Center (AFCOMAC), are excellent but need to be expanded. Only a few company grade officers have attended, and there is no program for field grade officers. These officers need the experience of planning and leading

wartime scale munitions operations. A short course could be offered at little cost. A second initiative could be technical correspondence courses, which are an inexpensive way to continually improve the knowledge level of the maintenance officer corps. Thirdly, we recommend that the Air Force Human Resources Laboratory study exactly what tasks maintenance officers need to do and what the most efficient methods are to prepare them for those tasks. The Human Resources Laboratory should also determine how broad a range of duties the Air Force can realistically expect maintenance officers to learn [i.e., task variety]. We need to continually look forward and to prepare our officers to win any future war.

## Chapter One

### INTRODUCTION

The maintenance officer career field is undergoing a tremendous amount of change caused by manpower shortages, increasingly sophisticated equipment, and expanded mission taskings. The authors chose to analyze the utilization of maintenance officers to determine if there is a valid requirement to maintain separate career fields for munitions and aircraft maintenance officers. The specific question this paper seeks to answer is, "Should the aircraft maintenance and the munitions maintenance officer career specialty be merged at the company grade level?" This study is part of a larger maintenance personnel utilization initiative being worked by Headquarters USAF/LEY and the Air Force Logistics Management Center, Gunter AFS, Alabama.

Four specific objectives will be addressed in this paper: (1) to analyze the evolutionary history of maintenance officer AFSCs; (2) to identify the current options, pro and con, for career field consolidation; (3) to produce a single document which contains a summary of the initiatives already completed, planned, or proposed, plus the relevant background information; and (4) to recommend a course of action and areas requiring further study.

The authors will examine the evolution of the maintenance officer career field from its inception in the Aero Division of the Signal Corps in 1907 to the present. As the technology, personnel and mission have changed, the career field structure has also evolved to provide the required support. By examining this historical evolution, it may be possible to project career field changes and provide a well thought out, logical force structure to support our increasingly technical and demanding mission. This historical view will hopefully provide senior maintenance leaders with a better perspective on how and why our current system came into existence and reduce the danger of "reinventing the wheel."

Currently, there are several options for consolidating maintenance officer AFSCs. Each major command, it seems, has a very different opinion on how to

solve this problem. Headquarters USAF/LEY is working the overall initiative under the title "Rivet Workforce." The aircraft maintenance and munitions maintenance officer career field merger is only a small part of this overall project. The authors will present the argument for and against merging the two career fields, and additional proposals with their underlying justifications. Sources of information include letters, position papers, talking papers, messages, meeting minutes, and other documentation from the major commands and Headquarters USAF.

This paper is organized chronologically and is composed of four chapters. Chapter One includes the introduction and an overview. Chapter Two is a history of the evolution of maintenance officer Air Force Specialty Codes. Chapter Three is the main portion of the study and details the current proposals, pro and con, for consolidating the aircraft maintenance and munitions maintenance officer AFSCs at the company grade level. Finally, Chapter Four includes an analysis, a conclusion, a specific recommendation, and the identification of areas requiring further study. In summary, this paper should provide senior maintenance leaders with an historical perspective of the problem, a synopsis of major command and Air Staff positions, and the opinions of the field grade maintenance officers attending the Air University. In essence, this paper should give those who want to influence the process the information to do so. It is important to start with an understanding of the historical evolution of the maintenance officer career field. Since the history is relatively short, it is not difficult to start with the beginning of military aviation.



## Chapter Two

### EARLY MAINTENANCE HISTORY

On 1 August 1907, the U.S. Army Aeronautical Division was activated (55:17). It had one flying officer who was responsible for the upkeep and maintenance of the one aircraft assigned. The budget was only \$150. This first pilot/maintenance officer was Lieutenant Benjamin D. Foulois. In 1910, Congress authorized the purchase of five aircraft and funded the program with \$125,000 to cover maintenance, fuel, spare parts, and all miscellaneous expenses (55:17). Lieutenant Foulois also wrote the first maintenance regulation, Provisional Airplane Regulations for the Signal Corps, United States Army, 1911. This regulation included,

... Information on the care, repair, and maintenance of the airplane on the ground; inspection duties; rules on the assembly and disassembly of airplane, field, and tent hangars; a provisional aero company organization; and incorporation of the commissioned, enlisted, and civilian personnel required to repair, maintain, and operate assigned aircraft (55:17).

It was in this regulation that the term "crew chief" first appeared and the need for a professional approach to maintenance was stated (55:17). Things were informal and simple during these early days. Both flying and maintenance were accomplished by "learning while doing." By 1917, the Army decided a more trained and professional approach was required to keep its aircraft flying (58:1).

The first training unit for aircraft maintenance was the Air Corps Technical School, founded at Kelly Field, Texas, on 1 October 1917 (58:1). The students attended lectures two hours each morning, five days a week, for a ten week course. One historical account describes a rather loose operation:

The sixteen instructors were lost early in the game [more exciting assignments]. As knowledge did not seem to be forthcoming, the

students turned their attention to the collection of aeronautical souvenirs. The altimeters went first, then spark plugs, struts, wire turnbuckles, and anything that looked interesting (58:2).

By January 1918, the school was more organized and had accumulated a large quantity of textbooks, equipment, and qualified instructors (58:2). In fact, the students who graduated were termed "desirable men to have in the squadrons" (58:2). In January 1921, the entire school was moved to Chanute Field, Rantoul, Illinois, and its name was changed to the Air Service Mechanics' School (58:2). The school functions were described as "training officers in the subjects of communications, photography, aircraft armament, and airplane maintenance engineering" (58:2). Classes were now two months in duration and only one course for officers was offered each year, and this class had only five to seven students per class (58:2). Until 1927, a single course included what is known today as aircraft and munitions maintenance (59:1). Ironically, this situation is identical to the current proposal.

In 1927, the Air Corps Engineering and Supply conference decided that aircraft and armament systems had become so complex that a separate course was required for armament officers (59:1). This course was similar in content to the enlisted course but concentrated on the supervision of "armament work" (59:1). In 1934, the school history reported that,

It was decided [this means no one took credit for the decision?] the same student officers could be specialized in both the subjects of Armament and Maintenance. To accomplish this, the maintenance course, which had grown to ten months, was shortened to seven and the Armament course was shortened to three months--both courses taught consecutively (59:2).

This only lasted two years because they were not able to treat these increasingly complex subjects in sufficient depth and were producing very "superficially prepared officers of both disciplines" (59:2). They separated the two courses and professional disciplines in 1936 and lengthened the armament officer course to seven months (59:2). At this time, there was considerable discussion as to the value of training with live ordnance and actual armament equipment. The goal was to produce a technically qualified officer as opposed to a larger number of less qualified officers (59:2). It was also in 1934 that the War Department considered moving the Air Service Mechanics' School from Chanute field to Denver, Colorado (59:6).

In 1934, because of better weather, the availability of space for a bombing range, and other associated reasons, the fight to move the school to Denver began (59:6). The War Department and the Army wanted to move the school but were locked in a battle with strong Illinois congressmen who opposed the move at every opportunity. The city of Denver even volunteered to donate property for the school. The Agnes Phipps Memorial Sanitarium property was later selected from several sites by an Air Corps board of officers. Colorado legislators finally got the proposed move on the congressional calendar for the first session of 1936, and the Senate quickly passed what was known as the Air School Bill (59:5). However,

The feeling of victory for the Coloradoans was short lived. An incident which depicts the extremes to which the Illinois group went to block Denver's bid: A few days prior to the vote in the House, a printed circular signed by all 19 members of the Illinois delegation was issued. It said, in part, various specious reasons for the change [from Rantoul to Denver] have been assigned by Army Officers. We are thoroughly convinced the real motive for the proposal is the desire of certain officers to increase their social and recreational opportunities (59:6).

This tactic, in addition to some vote trading and "pork barrel politics," again defeated the bill (59:6). Once everyone involved was convinced the Illinois delegation was too strong to oppose, the Denver group changed their goal to that of a compromise to move only a part of the Chanute school to Denver (59:6). The political expediency of compromise, not technical requirements, was the driving factor in the move to separate the armament and photographic divisions of the school and move them to Denver (59:7). These related schools, including the Armament Officer course, had been added to the aircraft maintenance school only two years earlier. A great deal of preparation was required to make the move to Denver, but by February 1938, the facilities at Lowry Field were ready to accept the Armament Division (59:15).

#### THE MUNITIONS COURSE MOVES TO DENVER

On 12 February 1938, two troop trains arrived in Denver from Rantoul, Illinois. The first train carried some 300 troops, their families, and personal

belongings. The second train, 30 cars in length, carried the equipment required to set up the Armament Division's maintenance school (59:15). Everything went well and from 1938-1940, the school provided a comprehensive curriculum which varied from 400 to 700 hours of instruction (59:82-90). In 1940, the course was improved by adding more practical training, and the length increased to 800 hours (59:89). During World War II, the course operated very successfully. Operations were accelerated, and the number of students tripled. Bunk beds, high density barracks, and three shifts of classroom operations enhanced the school's capability to handle an increased workload (59:5). In 1948, the course was altered to include instruction in management, organization, and administration of various units within the armament officer's jurisdiction. The course was 32 weeks long and included 960 hours of instruction (59:28).

### THE JET AGE MAINTENANCE ERA

By 1952, the number of maintenance officer specialty codes had expanded to include (60:199):

Aircraft Maintenance Staff Officer	Production Control Officer
Aircraft Performance Engineer	Fabrication & Repair Officer
Flight Test Maintenance Officer	Aircraft Maintenance Officer
Ground Equip.. Maint. Staff Officer	Ground Equip. Maint. Officer

By 1955, the armament officer specialty had expanded to include (61:179):

Armament Staff Officer	Ammunition Officer
Guidance Systems Officer	Nuclear Weapons Officer
Armament Systems Officer	Nuclear Officer
Armament Operations Officer	Guided Missile Officer

These were the first Air Force Specialty Codes (AFSC) converted from the earlier Army Military Occupation Specialty (MOS) and were exceptionally specialized (61:179). The new technology involved in jet aircraft, electronics, and munitions was regarded as a problem for the current level of training. The solution was to break these systems down into manageable blocks of related information (53:32-49). By 1960, ground equipment officers were assigned to transportation squadrons. The aircraft maintenance officers

received AFSC 4344, and the production control officers received AFSC 4355 (43:9;62:32.2). In 1963, the Avionics/Munitions Utilization Field was designated in response to increasingly sophisticated technology, and the following AFSCs were created (62:32.2 to 32.10):

Avionics/Munitions Staff Officer	AFSC 3216
Avionics Officer	AFSC 3234
Aerospace Munitions Officer	AFSC 3275

The avionics AFSCs were identified by suffixes of (A) for fighters, (B) for bombers, and (C) for other. The munitions officers were given suffixes of (A) for munitions and (B) for explosive ordnance disposal (62:32.2 to 32.10.1). By 1965, another refinement occurred which left avionics as a separate career specialty, designated as 3216; changed the aircraft maintenance officers to AFSC 4316; and changed munitions officers to AFSC 4616. There were now three separate and distinct career fields: aircraft maintenance, avionics maintenance, and munitions maintenance (63:32-46). This history led to the more recent change in 1976, when the avionics specialty was combined with aircraft maintenance and the AFSCs were changed to 4024 for aircraft maintenance and 4054 for munitions maintenance (38:1). The pendulum had swung back from the drive to specialize to a more generalized maintenance officer capable of supervising a broader range of maintenance activities. This early history had, therefore, set the stage for the increased complexity of current Air Force maintenance, personnel and organizational policy.

#### RECENT MAINTENANCE HISTORY

The initiative to combine the avionics AFSC (32XX) with the aircraft maintenance AFSC (43XX) to create the present 40XX aircraft maintenance AFSC was begun in 1970 and was the result of a proposed change to AFM 36-1 (1:1; 2:1; 4:1; 8:1; 9:2; 7:1; 11:1; 64:A-26). The merger was not completed until 1976 after many iterations and evolutions (64:A-19). The initial idea was to literally combine the two career fields into one 40XX career field and to identify avionics with a "3" (403X) and aircraft maintenance with a "2" (402X) (1:1;64:A-26). The merger was numerical only and not a true consolidation of the career fields. The Director of Maintenance and Engineering, HQ USAF, had argued effectively for and

successfully directed the merger because "it offered a better framework for more effective personnel resource management" (2:2) for both avionics and aircraft maintenance officers. Further, since the AFSC 4096, Director of Aerospace Maintenance, lieutenant colonel or colonel billet, had recently been created, the merger offered still broader opportunities for the career advancement of all maintenance officers, but especially the smaller group of avionics officers (2:2; 3:1; 5:2; 6:1).

### THE FIRST MERGER ATTEMPT

The Commander, Strategic Air Command, objected to the proposed merger stating that the merger did not go far enough (3:1; 41:1). In an October 1970 message to the Air Staff, SAC suggested that the merger include munitions and explosive ordnance disposal (EOD) officers [AFSC 4625A and B] as well (41:1-2). SAC further argued that both aircraft maintenance and avionics officers were managers first and technical experts second (3:1). The SAC proposal therefore encompassed avionics, aircraft, and munitions maintenance officers, including EOD, to be utilized in two AFSCs: 4016 for field grade officers and 4024 for company grade officers (3:1-2; 41:1). "This will provide officers with the necessary management skills and career progression to lead to the 4096, Director of Maintenance AFSC at the lieutenant colonel or colonel level" (3:1; 41:1).

After reviewing the SAC proposal, TAC and PACAF did not concur (42:1; 43:1). Their rationale for objecting was based on two reasons. The first reason was due to the diversity and weapon system environment of the tactical air forces aircraft, and because there were numerous variables in airframe, avionics and munitions equipment which required a technical expertise (42:2). Secondly, they argued that company grade officers needed to develop a "general knowledge and vocabulary" in definite career areas (42:2-3). Further, initial depth of experience was important for technical managers and company grade officer credibility (42:2-3). The combined TAC/PACAF position was to support the proposal for one field grade AFSC, but also to support multiple company grade AFSCs to produce technical experience, growth, and development (42:1-3; 43:1).

By the end of 1970, there were strong and credible arguments on either side of the maintenance fence. The Air Staff undertook a study to find

out the final collective "maintenance" position (6:4;44:1). In June 1970, the study was completed, but it was not until January 1971 at the Logistics Career Management Working Group that the issue was again discussed in depth and concrete resolutions and taskings were established (5:2; 6:2; 8:1).

The argument was further clouded by the Air Force Military Personnel Center (AFMPC) position of nonconcurrence (7:1; 9:1; 10:1). Not only was the AFMPC Palace Log Assignments Team newly formed and required time to become established, it was also the Palace Log charter to provide officers with the proper experience through matching their background with the Air Force requirement [and therefore, to "career develop" the officer] (7:2;9:1). "Any such consolidation," it was argued, "would not produce additional staff level officers, but would only further dilute field grade manning by a five way split versus the present day four" (9:1). In addition, such a consolidation could have an adverse impact on the already crucial field grade manning (7:1; 9:1).

	<u>Auth</u>	<u>Asgn</u>	<u>Percent</u>
401X	1424	773	54
403X	376	197	52
461X	405	248	61
311X	261	157	60
<hr/> TOTAL	<hr/> 2466	<hr/> 1375	<hr/> 55

Figure 1. CRITICAL FIELD GRADE MANNING, 40XX CAREER FIELD, 1973 (7:1)

Two discussion panels at the Logistics Career Management Conference agreed to establish one field grade position for all maintenance AFSCs including munitions, with a staff level course to provide the required integrated training (6:1-3). A second suggestion was to set up a study group to review the company grade officer consolidation proposal (5:2). The panel would study the

1. Validity of the assumption made by SAC that all maintenance officers are managers first and technical experts second; 2. Amount of training required to qualify a young maintenance officer in all three disciplines, with cost analysis; 3. Complexity of duties for a young maintenance officer in relation to the technical training, system knowledge, overall effectiveness and level of confidence, if such a consolidation were implemented (6:1).

In April 1971, the Air Staff study on the SAC merger proposal was complete, and their recommendation was to consolidate the avionics with the aircraft maintenance, but to keep the munitions maintenance as a separate AFSC (11:1-2). The crux of the argument against joining munitions with the other AFSCs was that a significant degradation in munitions programs would follow if technical expertise were to become secondary to management in importance. Technical knowledge was becoming more and not less important, with the introduction of guidance and control units, seekers, sensors, penetration aids, lasers, and electro-optics (11:1-2). This proposal clearly diluted experience and technical expertise (11:2). A second reason put forth was, contrary to public opinion, the munitions career field offered ample opportunity for its young officers to gain management experience, which is also required for assumption of positions of greater responsibility and higher rank (11:1-2). For example, numerous opportunities in materiel management and munitions supply, as well as periodic munitions maintenance scheduling, afforded management experience (11:2). "Munitions, therefore, was not an isolated, narrow activity far removed from the mainstream of Air Force materiel management" (11:2). Thus by the beginning of 1972, the proposed changes to AFM 36-1 showed the Maintenance AFSCs as follows (9:2):

4016	Aircraft Maint Staff Officer	4096	Aerospace Maint Director
4024	Aircraft Maint Officer	4616	Munitions Staff Officer
4036	Avionics Maint Staff Officer	4625A	Munitions Officer
4044	Avionics Maint Officer	4625B	Explosives Ordnance Disposal Officer

For undetermined reasons, the change to AFM 36-1 making the avionics



and aircraft maintenance one AFSC (40XX) was not promulgated until 1975 (64:A-26). In 1976, munitions moved under the general 40XX umbrella by assuming the 405X AFSC and retaining the "A" and "B" suffixes for identification of munitions and EOD officers (64:A-19,26). Thus, munitions field grade officers were now theoretically capable of achieving the full colonel, Director of Aerospace Maintenance AFSC 4096 (11:A-19,26).

## THE SECOND MERGER PROPOSAL

The issue of combining munitions with aircraft maintenance was raised again in 1978, during a biennial review of specialty descriptions in AFR 36-1 (12:1). TAC proposed merging the AFSCs because of their recent conversion to the production oriented maintenance organization (POMO) and its emphasis on sortie generation (14:1). Both Aerospace Defense Command and Systems Command supported the TAC suggestion (15:1; 20:1; 33:1).

On the other hand, strong objections were voiced by both SAC and PACAF as well as the Munitions and Missiles Division at Hq USAF (16:1;17:2;19:2-3;21:1-2;35:1). MAC did not support the proposal because they had no munitions requirements (13:1). Four basic reasons for the objections were raised. The first and most obvious was the difference in maintenance management organization between TAC and SAC. Strategic Air Command munitions activities under AFM 66-1 "required considerable. . . expertise. . . in the storage and maintenance of strategic nuclear weapons and support of the day-to-day alert force"(21:1). A second objection was articulated by PACAF as well as SAC, and was based on the sophistication of new and future weaponry, like the Short Range Attack Missile (SRAM) and the forthcoming Air Launched Cruise Missile (ALCM) (16:1;13:1;21:1). The Munitions and Missiles Division at the Air Staff raised a third objection which was that munitions expertise was required for crisis and contingency management (35:1). The Air Staff maintained that "crisis management and wartime calls for fast, accurate, and decisive leadership... [munitions] experts, not generalists, are called upon for decisions and recommendations" (35:1). This third objection flows into the fourth argument which was the requirement for trained munitions officers to fill "senior Air Force [munitions] positions [such as] the DOD Explosives Safety Board, Defense Nuclear Agency" and others (35:1).

It is interesting to note that Air Force Logistics Command supported neither initiative, but provided lengthy comments on training for either option. One of their statements which supported the AFSC merger illustrated the broad underlying assumption that officers, regardless of training, were managers and not technicians (18:2). "The time, effort and money presently spent by the Air Force in trying to make managers quasi-qualified technicians could be better spent in making them better qualified managers" (18:1).

As a result of all the major command (MAJCOM) comments in this review, there was no significant change to the specialty descriptions, and AFM 36-1 was retained as published in 1976 (64:A-26). Instead, the Tactical Air Command converted a number of their AGS munitions positions to AFSC 4024, thus enhancing the sortie production aspect of their maintenance philosophy (34:2;35:2).

#### THE MUNITIONS EXPERTISE ISSUE

Over the next few years, as the POMO concept grew and as the guidance and flexibility increased regarding where the DCM could assign officers, more and more potentially good munitions officers were moved from weapons storage areas to become Aircraft Maintenance Unit (AMU) chiefs in the TAF (22:1;65:3-1d[5];66:1-1). This loss of munitions identification prompted the USAFE/LG, Major General Curtis, to express his concern in a letter to the Director of Maintenance and Supply at the Air Staff. The subject concerned an "adverse trend in finding field grade officers with munitions experience" (22:1). He continued by citing poor Nuclear Surety Inspection (NSI) results, lack of unit munitions experience at the maintenance supervisor and commander levels, and lack of qualified officers for staff positions (22:1-2). He further stated, "We often place our strongest munitions officers in charge of [AMUs]. . . where day-to-day sortie production is more visible than the exacting business of managing a munitions storage area" (22:1). This letter was also sent to all MAJCOM Deputy Chiefs of Staff for Logistics (LGs) and to the commander of AFMPC (22:1).

Prompted by the USAFE/LG letter, Major General Doran, then SAC/LG, echoed Major General Curtis' concern in a separate letter to the Director of Maintenance and Supply, Brigadier General Masterson (23:1). Of primary concern was the perceived inability of SAC to man the munitions

maintenance squadrons (MMS) with qualified munitions officers (23:1). Further, a similar trend in NSI inspection ratings in SAC munitions units was observed. This, he felt, was indirectly the result of the "one-way crossflow of munitions officers to aircraft maintenance" (23:1-2). Therefore, the SAC position was to support the need to cultivate munitions talent. This became especially important when considering the force structure modernization programs scheduled for SAC through 1990 (23:1). These programs included the beddown of the B-1B, the modification of the SAC B-52 fleet for conventional munitions, the AGM-84 Harpoon, and MK-50 and -60 series aerial mines (23:2). These programs needed experienced munitions officers to successfully manage them (23:2).

In response to the two MAJCOM LGs, Brigadier General Masterson agreed with the problem of eroding munitions officer expertise, but disagreed with the establishment of a separate AFSC (25:1). The basis for including the munitions officer in the general 40XX umbrella in 1976 was twofold: one was "to provide young munitions officers with an opportunity to develop. . . expertise as a sound platform from which to launch a career," (25:1) and two, the career structure was made to allow "an equal opportunity for promotion for munitions officers" (25:1).

In 1982, the promotion rates for munitions officers to the grade of major were higher, in fact, than the promotion rates of both aircraft maintenance officers and the rest of the line of the Air Force. For the same year, a greater percentage of munitions officers were promoted to lieutenant colonel and colonel than were aircraft maintenance officers and the line of the Air Force (25:5). The trend was on the increase in all grades, although this had not always been the case (25:5;45:1;46:1;47:1;48:1;49:1). In this light, a return to a separate munitions AFSC outside the 40XX, "would impose inequitable promotion burdens on our officers without solving the problem [of expertise] which is based on both organization and training" (25:5). Thus, although he agreed that munitions experience was eroding, he did not believe that establishing a separate career field was the answer. However, he did direct that two initiatives be undertaken by the Air Staff. The first was titled the Munitions Officer Enhancement Program and "consisted of a marketing and public relations briefing given by the Munitions Division Chief and a project officer" (24:2) to unit level maintainers Air Force wide. The second initiative was to request "that a functional management inspection (FMI) be undertaken by the Air Force Inspection and Safety Center. This inspection was to examine training and utilization of munitions officers" (24:2). These

two programs would assist the Air Staff in resolving this issue (24:2;25:2;27:3-4).

The FMI was complete in July 1984 and the results supported the premise of Air Force senior management. "The perception that there had been a decline in the actual capabilities of Air Force munitions officers and that the decline in munitions officer expertise had the potential for a similar decline in overall mission support capability" (28:1) was confirmed. The primary cause was, however, the "peacetime training environment in which munitions activities were relegated to a minor role. . . and [the consequent lack of] development of munitions management expertise. . . to test our wartime munitions support capability" (28:3). The irony was that, even though there were glaring discrepancies, MAJCOMs chose to do business as usual. The results of this FMI were basically ignored (28:3).

In December, the Munitions Officers' Utilization and Training Workshop met to review the course curriculum. Few additions were made except that "aircraft maintenance related material was now to be included" (30:1) in the basic munitions officer course.

#### CURRENT MERGER STATUS

During the two years which passed between the Munitions Utilization and Training Workshop [December 1984] and the Aircraft and Munitions Training Review [January 1987], very little transpired in the area of AFSC merger. Programs such as the Air Force Combat Ammunition Center (AFCOMAC), the Munitions Officer Enhancement Program, and the Rivet Workforce were in progress. However, it wasn't until late 1986 that the Air Staff sponsored a review to "evaluate how we use our maintenance officers" (50:1;51:1). This review is the foundation of the current initiative to join the basic technical training schools (33:4). However, as was pointed out in the 24 February 1987 Minutes of the Air Force Munitions Logistics Steering Group, there was "no intention of proposing a consolidation of the AFSCs" (33:2). Thus, to date there are no plans to merge the career fields but rather only plans to join the basic technical training schools (39:2).

## Chapter Three

### ARGUMENTS FOR AND AGAINST THE AFSC 4024/4054 MERGER

Now that the evolution of munitions and aircraft maintenance officer AFSCs has been described, the authors will closely examine the arguments for and against the 4024/4054 career field merger and the positions of the concerned MAJCOMs. The various arguments for and against the merger will be presented in the following order: first, the arguments for; second, the arguments against; third, the proposal to merge but identify nuclear experience with an "N" suffix; and finally, the argument to separate munitions officers from the 40XX career field entirely by creating a 46XX AFSC (48:1). The results of a Functional Management Inspection on the Training and Utilization of Munitions Officers, conducted by the USAF Inspector General from 11 October 1983 through 13 July 1984, will be presented (28:1). Since the results of this decision will be borne by the maintenance leadership of the future, the authors interviewed maintenance officer students from both the Air Command and Staff College and the Air War College (68:1;69:1;70:1;71:1;72:1). What are the arguments in support of merging the munitions and aircraft maintenance AFSCs?

### ARGUMENTS FOR THE MERGER

The arguments supporting the proposed merger include increased combat flexibility, the Tactical Air Forces (TAF) *de facto* merger [driven by organization and DCM utilization of maintenance officers], better morale, and improved career development potential for munitions maintenance officers (38:1;54:1).

The first consideration should always be combat capability. According to the Air Force 2000 study, our forces will fight from many small dispersed bases [TAF and SAC] (54:3;67:10). These forces could be as small as four aircraft, and a small number of support personnel would have to possess the required skills to maintain combat capability under much less than ideal

conditions (54:3). There are not sufficient numbers of either munitions or aircraft maintenance officers to remain narrowly specialized and support this Air Force combat doctrine (54:5). If the two AFSCs were combined, the resulting "generalization" could provide a larger number of broadly qualified officers to support this Air Force concept of operating from small, autonomous, dispersed locations (54:3).

In the TAF, dispersed forces became standard operating policy under AFR 66-5, the decentralized maintenance concept (66:1-2). This constituted an actual merger of the 4024 and 4054 AFSCs because of the decentralized organizational structure and the way deputy commanders for maintenance (DCM) utilize maintenance officers (38:8). When a maintenance officer reports for duty at a TAF wing, for example, the DCM assigns the officer where the need is greatest, regardless of whether the officer is a munitions or an aircraft maintenance officer (38:4). This produces officers capable of leading maintenance operations in either the munitions storage area or on the flightline, if personnel assignments are managed prudently. The problem of declining munitions officer expertise is a function of the peacetime sortie generation perspective rather than a problem of AFSC numbers (37:1). If senior leadership provides the emphasis to munitions support activities on a daily basis rather than just at operational readiness inspection (ORI)/nuclear surety inspection (NSI) time, a more balanced air maintenance officer will be developed at the wing level (56:30).

This specialist or generalist officer problem has received a great deal of attention at the most senior maintenance levels. Air Force leadership, including Headquarters US Air Force Deputy Chief of Staff for Logistics and Engineering, fully supports broadening to produce officers qualified across many related disciplines and prepared for future senior logistic leadership positions (31:2). In the Fall 1985 Air Force Journal of Logistics, Lieutenant General Leo Marquez stated:

No longer can we afford to build discrete specialists in maintenance, or munitions, or supply, or transportation. To understand your particular discipline is no longer enough, you must fully understand the part you play in the entire logistics process. . . Not recognizing that we need leaders instead of maintenance officers or supply officers we have allowed officers to reach senior positions unprepared to manage the totality of a complex system (54:2).

If aircraft and munitions officers are more broadly prepared to assume positions of senior leadership, then it follows that their promotability and morale will also be improved.

Morale and promotability of munitions officers were also addressed by the Air Force Inspector General (IG) Functional Management Inspection (FMI) of the Training and Utilization of Munitions Officers in 1984 (28:2). The IG stated that senior maintenance leadership and the munitions officers themselves held negative perceptions of the munitions career field. It appeared to be a commonly held belief that since very few DCMs had any munitions experience, aircraft maintenance officers have a better promotion opportunity and that if you are a munitions officer, you are "stovepiped" or "too narrow" in professional qualifications (62:30). So it appears a 4024 and 4054 merger would remove the overt differences, discrimination, and stop the exodus of munitions officers into the aircraft maintenance career field (32:2). The "we-they" adversarial relationship could be exchanged for an "team" orientation which can only improve the overall maintenance performance and combat capability. These are good reasons for merging the AFSCs, but what are the opposing arguments?

#### ARGUMENTS AGAINST THE MERGER

The arguments against the merger are: (1) increased drain of munitions officer expertise, (2) lack of munitions officers qualified for special "hard core" munitions jobs, (3) "superficially knowledgeable" maintenance officers, and (4) aircraft maintenance officers in Air Training Command (ATC) and Military Airlift Command (MAC) do not need to know anything about munitions (14:1;22:1;23:1;25:1;29:1). The reason munitions maintenance remained separate despite previous attempts to merge with aircraft maintenance was the "special" expertise required for critical munitions jobs (35:1).

The loss of munitions officer expertise is the foremost reason given to oppose the merger (22:1;23:1). The SAC and USAFE Deputy Chiefs of Staff for Logistics have strongly criticized any maintenance policy which reduces munitions expertise (23:1;26:1;36:2). They argue that the TAF decentralized maintenance concept, especially in the Tactical Air Command, results in munitions officers who are assigned to the AGS, do only aircraft maintenance work, and yet are fully upgraded (4054A) after 18 months (26:1). This

situation is complicated by the perception on the part of some DCMs, and therefore most young maintenance officers, that the munitions career field is a dead end and that aircraft maintenance is where the action is important (28:2). As a result, many young munitions officers push hard to get into the aircraft maintenance business (32:2). The argument to support this is that we are building a peacetime organization which is excellent at maintaining a high training sortie rate, but not very capable of war fighting. Training sorties involve little or no munitions support; therefore, sortie generation performance is the basis for Officer Effectiveness Report (OERs) ratings. Aircraft maintenance officers, therefore, have more daily visibility than do munitions officers by the nature of their job. If combat munitions officers are not developed until the war horn sounds, it will be difficult to perform the wartime tasking (37:2-3).

Some munitions jobs are critical even in peacetime, especially in the nuclear weapons business (22:1). The SAC, USAFE, and AFLC LGs voiced a strong concern that maintenance officers with extensive munitions experience were not going to be available to fill special jobs at the staff and unit levels. These positions, for example, are on the staffs of the Defense Nuclear Agency, HQ USAF, Directorate of Nuclear Surety, the joint staffs of the unified commands, and the SAC staff (23:1;39:1). Unit level jobs requiring extensive munitions experience include: Munitions Support Squadron (MUNSS) Commander, Aviation Depot Squadron (AVDS) Commander, and SAC and Air Force Systems Command (AFSC) Munitions Maintenance Squadron (MMS) Commanders (22:1;23:1;31:1). The only way to produce officers with this technical expertise is to provide them with a mix of munitions jobs over a 10- to 12-year period, and by tracking them as munitions specialists instead of AFSC 4016 maintenance generalists (26:81). In addition to critical peacetime nuclear requirements, those opposing the merger also argue that in-depth munitions officer experience is required to support wartime requirements (37:2-3).

The argument that the merger would stretch maintenance officers too far, making them superficially qualified, was made by Major General Curtis', Commander of the San Antonio Air Logistics Center (SAALC), in his letter to Brigadier General Philip Metzler, Director of Maintenance and Supply (LEY), Hq USAF, 21 April 1987. General Curtis' letter stated:



The trend toward total consolidation of munitions and maintenance officer training, AFSCs, and assignment is extremely dangerous. A "general knowledge" maintenance officer with peacetime sortie production orientation would be ill-prepared to manage the immediate wartime transition to surge munitions production. Further, we have learned through long and bitter experience that nuclear logistics operations demand experience and technical expertise far beyond that required for general maintenance or even non-nuclear munitions management (35:1-2).

Further, even though aircraft and munitions maintenance officer AFSCs are combined at the field grade level under the current system, AFMPC and the MAJCOMs still track and assign people as either munitions or aircraft maintenance officers (56:30). Through the use of Special Experience Identifiers (SEI) and records review, specialists not generalists, are sought by major command and HQ USAF staff agencies (56:29). These actions occur despite their support for the "maintenance generalist concept" (56:50). Thus, it does not make much sense to combine the two career fields at the company grade level when we are still conscientiously tracking munitions and aircraft maintenance specialists at the field grade level (56:30).

The final argument against the merger comes from the aircraft maintenance community in commands which have no requirement for munitions expertise. ATC and MAC objected to the extra training cost and time involved to produce a more general knowledge aircraft maintenance officer in order to provide "some" knowledge of munitions (38:9). However, at the time of this writing, plans are firm to combine the two technical training schools (28:1).

## Chapter Four

### ANALYSIS AND CONCLUSION

After a thorough review of the arguments for and against the merger, analysis indicates the best option is to consolidate the AFSCs, but identify nuclear experienced officers with an "N" suffix. Five key points support this position: insufficient numbers of maintenance officers; the complexity curve concept; the need for technical nuclear officers for key jobs; the DCM's flexibility to assign officers where needed; and to remove the "we-they" problem in order to raise effectiveness and morale. These arguments will be discussed in the order presented. The complexity curve is a concept developed by the authors during the course of the research, and its explanation supports merging the two AFSCs. Finally, conclusions reached about areas requiring further study will be presented. Why did the authors recommend merging the two career fields?

First, the Air Force 2000 study describes how the Air Force will fight using numerous units with as few as four aircraft, dispersed to many operating locations [the TAF and SAC] (54:3;67:169). There are not sufficient numbers of munitions officers and aircraft maintenance officers to deploy in support of this combat doctrine (67:169). However, if these two career fields are combined, a training program could be designed in theatre to broaden their understanding and appreciation of both aircraft and munitions maintenance. The pool of available maintenance officers, therefore, could better support dispersal to a number of operating locations. The Air Force 2000 plan also stated, "Maintenance personnel will evolve as generalists as sortie production becomes limited to four flightline skills [aircraft mechanic, avionics, propulsion, and armament]" (67:73). This same study also predicted, "Funding constraints are likely to prevail in all manpower, equipment, and logistics resourcing activities" (67:170). So, if the Air Force intends to operate from many dispersed locations with fewer maintenance officers, each maintenance officer must be multi-talented and capable of performing more than just aircraft or munitions maintenance duties (54:3;67:172).

Secondly, the complexity curve concept describes the relationship of two trends: the increase in complexity and sophistication of newer weapons systems, and the Reliability and Maintainability 2000 initiative (R&M) (57:10). As weapons systems increased in complexity, more and more specialization was required to support maintenance. There was a proliferation of maintenance AFSCs and everyone became a specialist. However, at the same time there began an initiative to improve the reliability and maintainability of weapons systems by having maintenance personnel work with the design engineers during the early stages of development. The emphasis was to build weaponry that did not malfunction as often. If the system did break, the idea was to make it simple to remove and replace, or repair (57:10). The Air Force 2000 study describes maintainability in the future as follows:

Technology for the 21st century will provide built-in test equipment diagnostic circuitry, and modular systems architecture allowing expedient flightline maintenance. User friendly diagnostics will make the complexity of sophisticated systems "transparent," promoting generalized rather than highly specialized maintenance skills. . . These compatibilities will significantly speed up the accomplishment of maintenance tasks, further reducing support manpower requirements while enhancing rapid sortie production (67:172).

One of the arguments against the 4024 and 4054 career field merger was that the technology is still increasing in complexity and requires technically specialized maintenance officers (36:1:38:10). The authors would argue that while the technology is in fact increasing in complexity, maintaining the equipment will continue to become less complicated by design as a result of the R&M initiative (57:10). Thus, as a result of high technology, maintenance becomes simpler.

Third, the authors agree with the Commander of the San Antonio Air Logistics Center and the SAC/LG and LGW, who are the strongest proponents of the critical need for officers with nuclear munitions experience (17:1:21:1). The majority of billets requiring nuclear experienced officers are at the field grade rather than the company grade level (73:1). To produce officers with experience needed to fill these positions, the Air Force can train officers at the "generalist" maintenance school [i.e., the combined school at Chanute] and then provide the needed experience through several sequential and fundamental munitions assignments. Further, since the

majority of field grade 40XX billets are "nominate and assign" [such as A4016, squadron commander and 4016, MAJCOM staff positions], assignments are made by reviewing personnel records (73:1). Even though all these officers possess the 4016 AFSC, senior Air Force leaders, who are potential bosses, want to see an officer's record and review it to match the level of experience with the position requirements (73:1). Thus, whether filling a requirement at the Defense Nuclear Agency or Hq USAF, Directorate of Maintenance & Supply, Aircraft Division (Hq USAF/LEYY), future bosses request and are provided a copy of the nominee's record plus a cover letter outlining the officer's experience (73:1). The personnel system is consequently forced to identify and separate officers with "in-depth" experience [i.e. a specialist] in either munitions, avionics, or aircraft maintenance. The option to merge munitions and maintenance and to identify nuclear munitions experience with the "N" suffix is an improvement on the present system. Continuing separate company grade AFSCs does not increase munitions expertise because job experience qualifies selected officers for special jobs, not just the AFSC number.

Fourth, the merger would allow the DCM continued flexibility in assigning maintenance officers on the basis of where that officer can make the most significant contribution to the wing (65:3-1d[S]). In the authors' opinion, the real contribution at the company grade level is energy, initiative, and leadership, not technical expertise.

Fifth, the merger could help solve the "we-they" confrontation and improve both effectiveness and morale. Everyone would be on the same team. Maintenance officers could attend a single technical training course and then add specific training on munitions, safety, and nuclear operations. Varied assignments will provide practical experience. Maintenance officers would be perceived as basically the same, except that some officers would have more layers or depth of experience. In other words, the emphasis would be on what you have done and can do, instead of what type AFSC you might hold. This would produce a more capable maintenance officer (67:169).

In addition, because there are insufficient numbers of munitions and aircraft maintenance officers to support the dispersed operating location combat doctrine of the future, the munitions and aircraft maintenance officer AFSCs should be combined at the company grade level (54:1). Even though the weaponry continues to become more sophisticated, the ongoing

reliability and maintainability initiatives are making support of these systems less complex with remove and replace modular systems design (57:10). By using an "N" suffix, officers with nuclear experience can be tracked and assigned to those critical nuclear command and staff positions and thus meet the needs of SAC and the other nuclear capable commands. Finally, officers with munitions backgrounds could see themselves as officers with additional capability, instead of having "narrow" or "stovepiped" experience. They would feel more like an important team member instead of an outsider (56:30). The Air Force needs more broadly capable, experienced maintenance leaders who are "big picture" oriented and able to flex with the rapidly changing peacetime-wartime mission. The merger is the best decision to support the Air Force mission as well as the maintenance officers themselves.

In conclusion, certain areas are recommended for further study. Current initiatives to improve the Air Force's ability to "train like we fight," such as the Air Force Combat Ammunition Center, are excellent but need to be expanded. Only a few company grade officers have attended, and there is no program for field grade officers. These officers need the experience of planning and leading wartime scale munitions operations. A short course could be offered at little cost. A second initiative could be technical correspondence courses, which are an inexpensive way to continually improve the knowledge level of the maintenance officer corps. Additional studies should be conducted to determine what background and experience best prepares maintenance officers for senior logistics positions. Thirdly, we recommend that the Air Force Human Resources Laboratory study exactly what task maintenance officers need to do and what the most efficient methods are to prepare them for those tasks. The Human Resources Laboratory should also determine how broad a range of duties the Air Force can realistically expect maintenance officers to learn [i.e., task variety]. We need to continually look forward and prepare our officers to win any future war.

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## **GLOSSARY**

ACSC.....	Air Command and Staff College
AFCOMAC.....	Air Force Combat Ammunition Center
AFLC.....	Air Force Logistics Command
AFMPC.....	Air Force Military Personnel Center
AFSC.....	Air Force Specialty Code
AFSC.....	Air Force Systems Command
AGS.....	Aircraft Generation Squadron
ALCM.....	Air Launched Cruise Missile
AMMO.....	Ammunition Material Management Officer
AMU.....	Aircraft Maintenance Unit
ASTRA.....	Air Staff Training Program
ATC.....	Air Training Command
AVDS.....	Aviation Depot Squadron
DCM.....	Deputy Commander for Maintenance
EMS.....	Equipment Maintenance Squadron
EOD.....	Explosive Ordnance Disposal
FAA.....	Federal Aviation Administration
FMI.....	Functional Management Inspection
HQ.....	Headquarters
IG.....	Inspector General
LG.....	Director of Logistics
LGM.....	Director of Maintenance
LGW.....	Director of Munitions
MAC.....	Military Airlift Command
MAJCOM.....	Major Command
MOS.....	Military Occupation Specialty
MMS.....	Munitions Maintenance Squadron
MUNSS.....	Munitions Support Squadron

NSI.....Nuclear Surety Inspection  
 OER.....Officer Effectiveness Report  
 OIC.....Officer In Charge  
 ORI.....Operational Readiness Inspection  
  
 PACAF.....Pacific Air Forces  
 POMO.....Production Oriented Maintenance Organization  
  
 RAF.....Royal Air Force  
 R&M.....Reliability & Maintainability  
  
 SAC.....Strategic Air Command  
 SAALC.....San Antonio Air Logistics Center  
 SEI.....Special Experience Identifier  
 SRAM.....Short Range Attack Missile  
  
 TAC.....Tactical Air Command  
 TAF.....Tactical Air Forces  
  
 USAFE.....United States Air Forces Europe

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